In the Claims

This listing of claims will replace all prior versions and listings of claims in the instant application:

1. (currently amended) A method of diagnosing a voice signal, comprising:

processing a voice signal using an auditory model to produce a processed voice signal;

identifying one or more voice quality attributes of said voice signal by analyzing said processed voice signal;

comparing said one or more voice quality attributes of said voice signal with one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of the voice signal, wherein each of the at least one measure of vocal quality are selected from the group consisting of roughness, hoarseness, strain, and breathiness.

2. (cancelled).

3. (previously presented) The method of claim 1, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

4. (previously presented) The method of claim 3, wherein the one or more voice quality attributes of said voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

5. (previously presented) The method of claim 4, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness in said processed voice signal.

6. (previously presented) The method of claim 1, wherein said at least one measure of vocal quality is breathiness.

7. (previously presented) The method of claim 6, wherein the one or more voice quality attributes of said voice signal include a measure of low frequency periodic energy in said processed voice signal.

8. (previously presented) The method of claim 6, wherein the one or more voice quality attributes of said voice signal include a measure of high frequency aperiodie energy in said processed voice signal.

9. (previously presented) The method of claim 6, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness of a periodic signal portion of the processed voice signal.

10. (previously presented) The method of claim 6, wherein the one or more voice quality attributes of said voice signal include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

11. (currently amended) A system for diagnosing a voice signal, comprising:

a data store having stored thereon one or more baseline attributes;

a processor; and

a computer-readable storage medium having stored thereon a computer program executable by the processor, wherein when the computer program is executed by the processor, the system operates to:

    process a voice signal using an auditory model to produce a processed voice signal;

    identify one or more voice quality attributes of said voice signal by analyzing said processed voice signal; and

    compare said one or more voice quality attributes of the voiee signal with the one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of said voice signal, wherein each of the at least one measure of vocal quality are selected from the group consisting of roughness, hoarseness, strain, and breathiness.

12. (cancelled).

13. (previously presented) The system of claim 11, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

14. (previously presented) The system of claim 13, wherein the one or more voice quality attributes of said voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

15. (previously presented) The system of claim 14, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness in said processed voice signal.

16. (previously presented) The system of claim 11, wherein said at least one measure of vocal quality is breathiness.

17. (previously presented) The system of claim 16, wherein the one or more voice quality attributes of said voice signal include a measure of low frequency periodic energy in said processed voice signal.

18. (previously presented) The system of claim 16, wherein the one or more voice quality attributes of said voice signal include a measure of high frequency aperiodic energy in said processed voice signal.

19. (previously presented) The system of claim 16, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness of a periodic signal portion of the processed voice signal.

20. (previously presented) The system of claim 16, wherein the one or more voice quality attributes of said voice signal include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

21. (currently amended) A computer-readable storage, having stored thereon a computer program having a plurality of code sections executable by a computer for causing the computer to perform a method for diagnosing a voice signal, the method comprising:

processing, via the computer, a voice signal using an auditory model to produce a processed voice signal;

identifying one or more voice quality attributes of said voice signal by analyzing said processed voice signal;

comparing said one or more voice quality attributes of said voice signal with one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of said voice signal, wherein each of the at least one measure of vocal quality are selected from the group consisting of roughness, hoarseness, strain, and breathiness.

22. (cancelled).

23. (previously presented) The computer-readable storage of claim 21, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

24. (previously presented) The computer-readable storage of claim 23, wherein the one or more voice quality attributes of said voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

25. (previously presented) The computer-readable storage of claim 24, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness in said processed voice signal.

26. (previously presented) The computer-readable storage of claim 21, wherein said at least one measure of vocal quality is breathiness.

27. (previously presented) The computer-readable storage of claim 26, wherein the one or more voice quality attributes of said voice signal include a measure of low frequency periodic energy in said processed voice signal.

28. (previously presented) The computer-readable storage of claim 26, wherein the one or more voice quality attributes of said voice signal include a measure of high frequency aperiodic energy in said processed voice signal.

29. (previously presented) The computer-readable storage of claim 26, wherein the one or more voice quality attributes of said voice signal include a measure of partial loudness of a periodic signal portion of the processed voice signal.

30. (previously presented) The computer-readable storage of claim 26, wherein the one or more voice quality attributes of said voice signal include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

31. (previously presented) The method according to claim 1, further comprising:
recording a speaker's voice; and
generating the voice signal based on the recording of the speaker's voice.

32. (previously presented) The method according to claim 1, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

33. (previously presented) The method according to claim 1, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

34. (currently amended) The method according to claim 1, wherein the at least one ~~objective~~ measure of voice quality of the voice signal defines a degree of vocal quality of the voice signal relative to the at least one baseline measure of vocal quality of a human speaker.

35. (previously presented) The method according to claim 1, wherein the at least one measure of voice quality is an objective measure of voice quality.

36. (previously presented) The method according to claim 1, wherein the auditory model is a transfer function corresponding to a human auditory system.

37. (previously presented) The method according to claim 1, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

38. (previously presented) The method according to claim 1, transmitting the voice signal through a communication channel prior to processing the voice signal.

39. (previously presented) The system according to claim 11, further comprising a transducer, wherein when the computer program is executed by the processor, the system further operates to:

record a speaker's voice via the transducer; and

generate a voice signal based on the recording of the speaker's voice.

40. (previously presented) The system according to claim 11, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

41. (previously presented) The system according to claim 11, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

42. (previously presented) The system according to claim 11, wherein the at least one measure of voice quality of the voice signal defines a degree of vocal quality of the voice signal relative to the at least one baseline measure of vocal quality of a human speaker.

43. (previously presented) The system according to claim 11, wherein the at least one measure of voice quality is an objective measure of voice quality.

44. (previously presented) The system according to claim 11, wherein the auditory model is a transfer function corresponding to a human auditory system.

45. (previously presented) The system according to claim 11, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

46. (previously presented) The system according to claim 11, transmitting the voice signal through a communication channel prior to processing the voice signal.

47. (previously presented) The computer-readable storage according to claim 21, wherein the method further comprises:
   recording a speaker's voice; and
   generating a voice signal based on the recording of the speaker's voice.

48. (previously presented) The computer-readable storage according to claim 21, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

49. (previously presented) The computer-readable storage according to claim 21, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

50. (previously presented) The computer-readable storage according to claim 21, wherein the at least one measure of voice quality of the voice signal defines a degree of vocal quality of the voiee signal relative to the at least one baseline measure of vocal quality of a human speaker.

51. (previously presented) The computer-readable storage according to claim 21, wherein the at least one measure of voice quality is an objective measure of voice quality.

52. (previously presented) The computer-readable storage according to claim 21, wherein the auditory model is a transfer function corresponding to a human auditory system.

53. (previously presented) The computer-readable storage according to claim 21, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

54. (previously presented) The computer-readable storage according to claim 21, transmitting the voice signal through a communication channel prior to processing the voice signal.

55. (cancelled)

56. (new) The method according to claim 1, wherein the at least one measure of vocal quality is strain.

57. (new) The system according to claim 11, wherein the at least one measure of vocal quality is strain.

58. (new) The computer-readable storage according to claim 21, wherein the at least one measure of vocal quality is strain.